EDUCATIONAL OCCUPANCY LIMITED REVIEW PLAN CORRECTION LIST
Renovations to Existing Buildings Only
25 to 99 Clients and 3,000 to 5,000 Square Feet – K through 12th

Plans have been reviewed for compliance with the 2006 International Building Code (IBC) (excluding Chapter 11 and 27), 2006 International Fire Code (IFC), 2006 International Mechanical Code (IMC), 2006 International Fuel Gas Code (IFC), 2006 NFPA 101 *Life Safety Code* [Rule 0780-2-2-.01], 2008 NFPA 70 National Electrical Code [Rule 0780-02-01-.02], and one of the following standards for the enforcement of the Tennessee Public Building Accessibility Act – 2002: North Carolina Accessibility Code with the 2004 Amendments, or USDoJ currently enforced Uniform Federal Accessibility Standards (UFAS – August 7, 1984), or USDoJ currently enforced Americans with Disabilities Act Accessibility Guidelines (ADAAG – 1991 with 1994 Revisions). [TCA 68-120-204]

The following list does not necessarily include all deficiencies. See additional items on the Plans Review cover sheet.

Please Note: Items listed require correction by revised plans, addenda, field orders, or change orders before plans are approved for construction. Answers in letter form are *not* acceptable. **Starting construction before plans approval may be considered as just cause by the State to issue a stop work order.** [Rule 0780-2-3-.02(1)]

Procedures

1. Limited plans review requires the submission of current construction documents based on as-built plans and specifications. As-built plans and specifications include, but are not limited to, the following items: floor plans with door and window schedules, finish schedules, furnace and water heater locations, fire alarm systems, emergency lighting, exit signs, fire-rated assemblies, any accessibility issues addressed pursuant to Tenn. Code Ann. § 68-120-204 and any available specifications. Additionally, a structural engineer's analysis must accompany the plans when submitted. [Rule 0780-02-03-.01 (i)]

2. Provide two copies of plans and one copy of specifications sealed (with signature and date) by a Tennessee registrant in accordance with the Architects and Engineers Licensing Law Rules. [Rule 0780-2-3-.03 and A&E Rule 0120-2-.08(3)] If revisions are submitted, two copies are required.

3. Buildings must be designed to the minimum State of Tennessee adopted codes and standards. Provide the following code information on the cover sheet of the plans for new and existing buildings:

   A. ICC International Building Code, 2006 edition, including ICC International Fuel Gas Code, 2006 edition, and ICC International Mechanical Code, 2006 edition [Rule 0780-2-2-.01]

   B. NFPA 101 Life Safety Code, 2006 edition, published by the National Fire Protection Association [Rule 0780-02-02-.01] and NFPA 70 National Electrical Code, 2008 Edition [Rule 0780-02-01-.02]

C. One of the following standards for the enforcement of the Tennessee Public Building Accessibility Act - 2002 North Carolina Accessibility Code with the 2004 Amendments, or USDoJ currently enforced Uniform Federal Accessibility Standards (UFAS – August 7, 1984), or USDoJ currently enforced Americans with Disabilities Act Accessibility Guidelines (ADAAG – 1991 with 1994 Revisions). [TCA 68-120-204]

D. Occupancy Group per Chapter 3, IBC 2006 edition

E. Identify whether there is a proposed change of occupancy for this project. Show previous and proposed occupancies

F. Construction Type, protected or unprotected, sprinklered or unsprinklered per Chapter 6, IBC

G. Number of stories, and/or height of building

H. Area of building according to IBC Table 503 for new and existing. Show building area modification calculations per IBC Section 506.

4. Provide a summary statement explaining the project's Scope of Work on the design drawing that shows the project's codes analysis.

5. Complete the Plans Review Submittal Form (PRSF) and remit the required fee. [Rule 0780]

6. The fee has been calculated incorrectly. Balance due is _____. We are refunding _____. (The refund process takes approximately 6 to 8 weeks.)

7. A Codes Enforcement Officer will inspect the existing building and issue an inspection report. Deficiencies found must be addressed prior to a Certificate of Occupancy being issued. [Rule 0780-2-3-.10]

8. NOTE: In order to expedite processing of this project please refer to "TFM NUMBER" on transmittal letter when submitting any correspondence, plans, and specifications**.**

General

1. Identify use of rooms and spaces.

2. Provide door and door hardware schedule. Show fire ratings for rated assemblies [IBC 1008.1.8.1 thru 1008.3.2]

3. Provide glazing schedule. Specify size and type of glazing. Indicate location of fire-resistance rated wire glazing or tempered (safety) glazing on door, door frames, and window elevations.

4. Provide interior finish schedule. Interior finish throughout must be Class A or B. [NFPA 101 10.2 and 16.3.3]

5. Provide legend for all fire-resistance rated wall enclosures to identify specific ratings and their limits (i.e., smoke partitions, smoke barriers, one, two, four-hour ratings, and 2/3/4- fire walls) (Show on Life Safety Plan and ALL Floor Plans.)

6. Provide the entire third party tested assembly details on plans for any fire-resistance rated wall, column, beam, floor/ceiling, roof/ceiling assemblies, fire rated head-of-wall joints, curtain walls, and fire stopping penetrations through fire rated construction. Provide details in their entirety which include design illustrations and material specifications without modification or manipulation (see "Important Information For Users Of This Directory, Use of This Directory" in Volume 1 of the most recent printed Fire Resistance Directory - or - at the bottom of each "record" (i.e., UL system number) on the online certification directory available http://www.ul.com for UL's terms and conditions of use).

   A. Fire Rated Walls, Columns, Beams, Floor/Ceiling and Roof/Ceiling Assemblies. Show what UL or other assembly number is being used for the fire rated walls, floor/ceiling, and roof/ceiling assemblies. [IBC Section 703] Prescriptive fire-resistance rated building elements may be used for existing structures when evaluating and determining fire resistive capacities of existing assemblies. [IBC Section 720]

   B. Fire Rated Joint Systems. Show what UL or other assembly number is being used for fire rated assembly connections such as wall-to-wall, floor-to-floor, floor-to-wall, head-of-wall, and bottom-of-wall joints where not inherently tight.

   C. Curtain Wall Joint Systems. Show what UL or other assembly number is being used for perimeter fire containment systems such as unrated curtain wall-to-rated floor assemblies where not inherently tight.

   D. Fire stopping. Show what UL or other assembly number is being used for tested systems for each size and type of penetrating object such as metallic and nonmetallic electrical, plumbing, HVAC piping and ductwork, fire protection sprinkler system piping, electrical wiring or conduit through fire resistive assemblies. [IBC Section 712 and NFPA 101 8.3.5] Provide plumbing details for toilet, shower, and tub penetrations at 1-hour fire rated floor assemblies and plumbing penetrations within walls when penetrating 1-hour rated floor assemblies.

7. Provide a reflected ceiling plan showing lights, diffusers, exit sign, sprinkler heads, smoke detectors and emergency lights, etc.

8. Provide design live load values on plans for wind, roof, floor, stairs, guard and hand railings, seismic per IBC 1603.1.5, etc. [IBC Section 1603] For existing buildings that have not been reviewed and approved by our office, provide "as built" plans from a Tennessee licensed structural engineer or an evaluation report sealed, signed, and dated from a Tennessee licensed structural engineer. The evaluation report must show the design live loads for wind, roof, floors, stairs guard, hand railings, and seismic.

Site

1. If this building will be licensed for handicapped children, provide a site plan showing accessibility from a designated parking space (96 inches wide plus 60 inches wide aisle and above ground sign) to the primary entrance with any curb cuts, ramps, etc. [NCAC 3.1,

3.2, 3.3, 4.1, 4.2, 4.3, 4.4, and 4.6] See **ACCESSIBILITY CORRECTION LIST** for restroom and additional requirements.

Construction

1. Building exceeds allowable area/number of stories/height for this type of construction and open space. [IBC Table 503] Sprinklered buildings must comply with 2002 NFPA 13 to receive allowable building code height, area, and number of stories. [IBC Table 503, 504.2, 506.3, 506.4, 508.3.2, 602.1.1] **Show calculations on drawings.**

2. Show _____ hour fire rated occupancy separation provided between _____ and _____ occupancies. [IBC 508.1, 508.3.3.4, and Table 508.3.3; See IBC 508.3.2 for Non-separated Occupancies]

3. Glazing in non-rated doors, sliding doors, storm doors, within 24 inches of doors, within 18 inches above finished floor, and exceeding 9 square feet within 36 inches of walking surface must be safety glazed, tempered, and pass the test requirements of CPSC 16 CFR, Part 1201. [IBC 2406.1, .2, and 2406.3, (6) & (7)]

4. Glazing in fire-resistance rated doors must be wired glass or other tested glazing material and must be limited in size according to door rating. [IBC 715.2, 715.4.6, 715.4.4.1 and Table 715.1.3 and NFPA 101 8.3.3, 8.3.4, Table 8.3.4.2]

5. Specify that fire-resistance rated doors must have fire rated frames, hardware, closers, and other rated accessories. [1999 NFPA 80 1-4 Definition of “Fire Door,” 1-6.1, 2-4.7, and IBC 715.4]

6. Rooms 100 square feet or greater that are used for storage, any size janitor closets, and all rooms used for storage of hazardous materials, and gas furnace rooms must be 1-hour fire-resistance rated enclosure with 45-minute labeled door assemblies or must be protected by automatic sprinklers with smoke tight partitions, solid doors with self closers, and positive latching hardware. [NFPA 101 14.3.2.1, 8.4, 8.7.13, 8.7.1, 8.7.1.2, 8.4, 9.7.1, and IBC Table 508.2]

7. Fuel fired water heaters with an aggregate input capacity that exceeds 200,000 BTU or 210ºF or 120 gallons or rooms 50 square feet and greater must be enclosed in 1-hour fire-resistance rated construction with 45-minute labeled door assembly **or** must be protected by automatic sprinklers with smoke tight partitions, solid doors with self closers, and positive latching hardware. [NFPA 101 14.3.2.1, 8.7.1, 8.7.1.2, 8.4, and 9.7.1, IBC 903.2]

8. Fire-resistance rated walls must extend tight against the underside of a roof or floor deck or to the underside of a rated smoke tight ceiling which has the same rating as the wall such as two layers of 5/8 inch fire rated gypsum panels at the ceiling for tenant separation (throughout building with opening protection), one hour storage or janitor spaces, and one or two hour rated walls (shaft rated) turned horizontally and anchored to the walls for corridors, elevator, stair, and breezeway ceilings. [NFPA 101 8.2.2.3] Provide details.

9. Provide one/two hour separation to maintain floor-to-floor separation. One hour fire rated floor/ceilings are required in existing two story houses converted into day care centers.

Provide a one-hour fire rated separation with 1-hour rated door assemblies at lower or upper floor stair systems. [Agreement with DHS and C&I)

10. An opening not less than 20 inches by 30 inches must be provided to any attic area having a clear height of 30 inches. [IBC 1209.2]

11. In combustible construction fire-blocking must be installed to cut off both vertical and horizontal concealed draft openings and must form an effective barrier between floors, between a top story and a roof or attic. [IBC 717.2 and 717.2.1]

12. Regardless of construction type or fire protection, laboratory units in educational occupancies must be separated from non-laboratory areas by 1-hour fire-resistance rated construction, 45-minute fire rated door assembly, and positive latching hardware with self closers. [NFPA 101 14.3.2., 8.3, and 2004 NFPA 45 3.1.3]

13. Closet door latches must comply with NFPA 101 16.2.2.2.4 (if used for day care).

14. Bathroom door locks must comply with NFPA 101 16.2.2.2.5 (if used for day care).

Means of Egress

1. Assembly rooms with an occupancy load of 50/500/1000 must have 2/3/4 means of egress. [NFPA 101 7.4.1.1, 7.4.1.2, and IBC 1019.1] Each floor must have a minimum of two exits. [NFPA 101 14.2.4]

2. Main and secondary exits in assembly areas must accommodate one-half of the occupancy load. [IBC 1025.2, .3, NFPA 101 12.2.3.6 (see 12.2.3.6.2 for two-thirds), and 12.2.3.7]

3. Where two exits or exit access doors are required from a building or area, they must be separated by one-half or one-third if sprinklered throughout the diagonal dimension of the building or area served. [IBC 1015.2, NFPA 101 7.5.1.3.2, and .3]

4. Doors, windows, and openings in exterior walls of an exit enclosure must be protected by a 45-minute fire-resistance assembly when located within ten feet horizontal projection and extending vertically from the ground to a point ten feet above the topmost landing. [IBC 1020.1.4, NFPA 101 7.2.2.5.2, 7.2.2.6.3.2, and 7.2.2.6.4] The stairways must be separated from the interior of the building by one/two-hour fire-resistance rated construction. [IBC 1020.1 and NFPA 101 7.1.3.2]

5. Changes in elevation of less than 21 inches in the means of egress must be by ramp or stair complying with NFPA 101 7.1.7. This includes handrails on both sides of steps, 13-inch treads, and readily visible treads.

6. New handrails must be installed to provide a clearance of not less than 2¼" between the handrail and the wall to which it is fastened. [NFPA 101 7.2.2.4.4.5]

7. Handrails are required on both sides of stairs with extensions and mounted between 34 in. and 38 in. measured vertically to the top of the railing from the top of a stair tread nosing. [NFPA 101 7.2.2.4.1, 7.2.2.4.4, IBC 1009.10, 1012.2, NCAC 8.3.2, and 8.3.3] Guards

must be provided at the open side of a means of egress that exceed 30 in. above the floor or grade below. [NFPA 101 7.1.8, 7.2.2.4.5, and IBC Section 1013] Guards must not be mounted less than 42 in. high (see Exception 7.2.2.4.5.2(2)) and maximum 4 in. sphere clearance for intermediate rails at open guards.

8. Egress must not be through kitchens, storage rooms, closets, or any space identified as a hazardous location. [NFPA 101 7.5.1.6 and IBC 1014.2(2.)]

9. Corridors must be 1-hour fire-resistance rated construction with 20-minute fire rated door and hardware assemblies. [IBC 1017.1, Table 1017.1, and NFPA 101 14.3.6] Corridors in sprinklered building must be separated by smoke partitions as a minimum. [NFPA 101 14.3.6(2) and 8.4] Corridors may be unrated when student occupied spaces have exterior exit doors. [NFPA 101 14.3.6(1) and IBC 1017.1(1.)]

10. Fire-resistance rated corridors must be continuous from the point of entry to an exit and must not be interrupted by intervening rooms (see Exception). [IBC 1017.5 and NFPA 7.5.1.2]

11. Dead ends in exits and exit access must not exceed 20 feet. [IBC 1017.3] Common path of travel must not exceed 75 feet. [IBC 1014.3]

12. The floor on both sides of any door must be substantially level and may not vary more than ½ inch for a distance at least equal to the width of the widest leaf. [NFPA 101 7.2.1.3 and IBC 1008.1.4]

13. Panic hardware is required on all doors with a latch or lock in the means of egress from an area of an educational/day care occupancy having an occupant load of 50 or more. [IBC 1021.2] Only approved fire exit hardware shall be used on fire doors. [NFPA 101 7.2.1.7.2]

14. Unless this building is fully sprinklered, each room 250 square feet or larger used for student activities must have an emergency window or exterior exit door. [NFPA 101 14.2.11.1]

15. Emergency windows must provide a clear opening of 20 in. in width, 24 in. in height, 5.7 square feet, and be no more than 44 in. from the floor. [NFPA 101 14.2.11.1] They must have an operable latch no more than 54 in. above the floor.

16. In school building, rooms normally occupied by pre-school, kindergarten, or first-grade pupils must be located on the level of exit discharge. Rooms normally occupied by second-grade pupils must not be located more than one story above the level of exit discharge. [NFPA 101 14.2.1.2 and 16.2.1.3]

17. Minimum exit access corridor clear width of six feet is required. [NFPA 101 14.2.3.2]

Mechanical

1. Fire dampers are required where ductwork penetrates a one or more hour fire-resistance rated wall. [IMC Section 607 and IBC 716.5] Fire dampers may be omitted in 1-hour fire partitions where the duct penetrating the wall is not larger than 100 in², the duct does not

terminate at a wall register, steel duct material is 0.0217 in. thick, and the duct is located above the ceiling. [IBC 716.5.4 and IMC 607.5.3]

2. Ductwork penetrating a fire-resistance rated horizontal assembly such as a floor/ceiling or roof/ceiling assembly must be enclosed within a fire rated shaft: 1-hour up to 3-stories and 2-hours for 4-stories or more. Fire dampers may be used in lieu of a shaft where only one floor is penetrated. [IBC 616.6.1, IMC 607.6.1, 2002 NFPA 90A 5.3.4.1, and 5.3.4.3.1]

3. Ductwork penetrating non-fire rated floor/ceiling horizontal assemblies must be equipped with a fire damper where the duct connects no more than 3-stories. Ducts connecting 4 or more stories must be enclosed in a 2-hour fire rated shaft. [IBC 716.6.3 and IMC 607.6.3]

4. Provide combination fire/smoke dampers in transfer air grille openings through fire rated walls. A smoke damper is required at transfer openings for unrated walls that must resist the passage of smoke such as a smoke partition or smoke barrier. [IBC 716.5, IMC 607.5, NFPA 101 8.3.4.1, 8.4.6.2, and 8.5.5.2]

5. Provide combination fire/smoke dampers in transfer air grille openings through fire rated walls. A smoke damper is required at transfer openings for unrated walls that must resist the passage of smoke such as a smoke partition or smoke barrier. [IBC 716.5, IMC 607.5, NFPA 101 8.3.4.1, 8.4.6.2, and 8.5.5.2]

6. Smoke dampers must be installed in duct penetrations of smoke barriers unless the duct is a part of a smoke removal system. [IBC 716.5.5, IMC 607.5.4, NFPA 101 8.5.5.2, and 2002 NFPA 90A 5.3.5]

7. Ceiling dampers or other methods of protecting openings in rated floor/ceiling or roof/ceiling assemblies must comply with the construction details of the tested floor/roof/ceiling assemblies, with listed ceiling air diffusers, or listed ceiling dampers. [IBC 716.6, IMC 607.6, and 2002 NFPA 90A 5.4.4]

8. Where air ducts and openings for air ducts are used in a fire-resistance rated floor/ceiling or roof/ceiling assemblies, all materials and the construction of the assembly including the air duct materials and the size and protection of the openings must conform to the design details of its listing. [2002 NFPA 90A 5.3.3.1]

9. Systems from 2,000 to 15,000 CFM must have a duct mounted smoke detector mounted in the supply duct downstream of all filters and in the return air stream prior to any exhausting from the building or mixing with fresh air makeup. [2002 NFPA 90A 6.4.2.1(1) and IMC 606.2.1] These smoke detectors must be wired to a fire alarm system when one is provided in a constantly attended location for supervisory signals. [IMC 606.4.1 and 2002 NFPA 90A 6.4.4] See requirements for buildings not equipped with an approved fire alarm system.

10. Systems over 15,000 CFM must have duct mounted smoke detector shutdown and smoke dampers in both the supply and return ducts to isolate the fan from the duct system. [2002 NFPA 90A 4.3.9.2] These smoke detectors must be wired to a fire alarm system when one is provided in a constantly attended location for supervisory signals. [IMC 606.4.1 and 2002 NFPA 90A 6.4.4] See requirements for buildings not equipped with an approved fire alarm system.

11. Corridors must not serve as supply, return, exhaust, relief, or ventilation air ducts. [IBC 1017.4]

12. Materials exposed to plenum airflow must be noncombustible or limited combustible and have a maximum smoke developed index of 50. [IBC 717.5, IMC 602.2.1, and 2002 NFPA 90A 4.3.10.2.6]

13. Provide information showing how combustion air and ventilation are provided for the room containing fuel fired equipment. Show size, free area, location of vents within 12 in. above finished floor and 12 in. below ceiling. [IMC 701.2 and 2006 NFPA 54 9.3] Provide corrosion-resistant exterior screen for combustion air openings to the outside. [IMC 710.1 and Table 401.5]

14. Provide commercial kitchen hood ventilation system Design Intent information by a Tennessee registered engineer. See the attached kitchen Hood and Duct Design Intent Ventilation Control and Fire Protection of Commercial Cooking Operations correction list.

15. Gas lines may not penetrate a 2/3/4-hour fire-resistance firewall. The areas are considered separate buildings. [2006 IFGC 409.3.2 and IBC 705.1]

16. A separate and individual ventilation system, not part of any other system, must be provided for ventilation of each room or space containing flammable vapors, combustion vapors, noxious gases, and flammable dusts. [SMC 401.2]

17. Where earthquake loads are applicable according to the IBC, mechanical equipment, piping, and ducts must be designed and installed to resist the seismic forces in the IBC. [IMC 301.15]

Fire Suppression

1. All portions of the school building below the level of exit discharge must be sprinklered. [NFPA 101 14.3.5.1 and IBC 903.2.2(2.)]

2. All stages greater than 1,000 sf in middle, junior high, and high schools must be sprinklered including all auxiliary spaces and dressing rooms, storerooms, and workshops (see Exceptions). [NFPA 101 12.4.5.10 and IBC 410.6]

3. Provide automatic sprinkler system Design Intent information by a Tennessee registered engineer. See the attached Sprinkler Design Intent correction list.

4. Complete automatic sprinkler system Shop Drawings must for reviewed and approved prior to installation after a Pans Approval for this building has been issued. Shop drawing information is generally a stipulation on the plans upon initial approval of the project. [Rule 0780-2-3-.03(2)] You do not need to respond to this item at this time.

5. Portable fire extinguishers must be provided. [2006 NFPA 1 Table 13.6.1.2 and 2002 NFPA 10]

Electrical

1. Provide emergency lighting for assembly areas, stairways, aisles, corridors, exitways, labs, shops, all flexible and open plan buildings and to path of egress travel to a public way (located at the exterior side of all required exterior exit doors). [NFPA 101 7.8.1, 12.2.9, 14.2.9 and IBC Section 1006]

2. Emergency lighting must have stand-by power source (NFPA 101 7.9.2, 2008 NFPA 70 Article 700, and IBC 1006.3) and automatically provide the required illumination in the event of any interruption of normal lighting in areas where emergency lighting is required by IBC 1006.1 and NFPA 101 7.8, due to any of the following:

   A. Failure of a public utility or other outside electrical power supply.

   B. Opening of a circuit breaker or fuse.

   C. Manual act(s), including accidental opening of a switch controlling normal lighting facilities.

3. Exit signs must be visible from all directions of travel. [NFPA 101 7.10.1.1 and IBC 1011.1] Tactile exit signage must be located at each exit door requiring an exit sign. [NFPA 101 7.10.1.3 and IBC 1011.3]

4. Exit signs must have an emergency power source or be a listed self-illuminating type sign. [NFPA 101 7.10.4, IBC 1011.5.3, and 2008 NFPA 70 700.12(F)]

5. Recessed light fixtures in fire-resistance rated ceilings must be protected or be listed for use in a rated assembly. [IBC 712.4.1.2]

6. A fire alarm system with an emergency power source is required. [NFPA 101 14.3.4.1, IBC 907.2, and 2002 NFPA 72 4.4]

   A. Provide a manual fire alarm initiation system (see Exceptions). [NFPA 101 14.3.4.2, 14.3.4.2.3, and IBC 907.2.3]

   B. Provide audible and visible signal alarm notification. Provide visible devices for all student occupied spaces including individual classrooms. [NFPA 101 14.3.4.3.1, 9.6.3, 9.6.3.5, 2002 NFPA 72 7.5, and 2002 NCAC 17.1.2]

   C. Emergency forces notification is required and must transmit the alarm automatically. [NFPA 101 14.3.4.3.2 and 9.6.4]

7. Provide dBA ratings of all audible notification devices on drawings next to each notification device. [2002 NFPA 72 7.4 and Table A.7.4.2]

8. Provide the candela (cd) rating of all visible notification devices on drawings next to each signaling device. [2002 NFPA 72 7.5, Table 7.5.4.1.1, IBC 907.9.1 and IFC 907.10.1]

9. The fire alarm control panel or an annunciating device must be located in an area where trouble signals can be monitored (audibly and visually). [2002 NFPA 72 4.4.3.5, 4.4.6] This is to be distinguished from a general alarm system.

10. The Fire Alarm Control Panel circuit disconnecting means shall have a red marking, shall be accessible only to authorized personnel, and shall be identified as “FIRE ALARM CIRCUIT.” The location of the circuit disconnecting means shall be permanently identified at the fire alarm control unit. [2002 NFPA 72 4.4.1.4.2.2 and 4.4.1.4.2.3]

11. An automatic sprinkler system when installed must be connected to the fire alarm system. [NFPA 101 14.3.4.2.2, 9.7.2, and IBC 907.2.3]

12. Show the following electrical and fire alarm connections on plans.

    A. Location of connections of all air handling shutdowns.

    B. Location of connections to the kitchen hood fire extinguishing system that activates the fire alarm system.

    C. Location of all connections for required cooking equipment shutdowns such as shunt trip circuit breakers and gas solenoid valves unless a mechanical gas line shut-off is specified.

    D. Location of flow switch or alarm check valve connection to the general building alarm and central station or fire department.

    E. Location of supervisory alarm connection from tamper switches on sprinkler system water control valves.

13. Automatic smoke detection must be provided at each fire alarm control panel (excludes annunciator panels) in areas not continuously occupied that contain controlling equipment. [2002 NFPA 72 4.4.5] Heat detection is permitted if ambient conditions prohibit installation of smoke detection.

14. Smoke detectors controlling hold open devices must be located in accordance with 2002 NFPA 72 5.14.6. Hold open devices must release in accordance with NFPA 101 7.2.1.8.1 and must be supervised by the fire alarm system. [NFPA 101 9.6.3.2.3]

15. Each floor must be zoned separately and no zone may exceed 22,500 ft2 for the fire alarm system in nonsprinklered buildings. [IBC 907.8]

16. Electrical outlet boxes located on opposite sides of rated walls must be separated by a horizontal distance of 24 in. [IBC 712.3.2]

17. Provide balanced electrical panel load schedules. [2008 NFPA 70 Article 220]

18. Provide a minimum 3 ft horizontal, 6½ ft vertical, and 30 in. width working space in front of electrical equipment. [2008 NFPA 70 110.26(A)(1-3) and Table 110.26(A)(1)] Working spaces may not be used for storage and may not contain ductwork, piping, etc.

19. There must be one entrance not less than 32 in. wide and 6½ ft high at each end of the working space for electrical equipment rated for 1,200 amperes or more and 6 ft (1.8m) wide containing overcurrent devices, switching devices, or control devices. [2008 NFPA 70 110.26(C)(2) and NFPA 101 7.2.1.2.4] Both entrances shall open in the direction of the

egress and be equipped with panic bars, pressure plates, or other devices that are normally latched but open under simple pressure.

20. Dry-type transformer installed indoors and rated 112½ kVA or less must have a separation of at least 12 in. from combustible material unless separated from the combustible material by a fire-resistant, heat-insulated barrier. See exception. [2008 NFPA 70 450.21(A)]

21. Individual dry-type transformers of more than 112½ kVA rating must be installed in a transformer room of minimum 1-hour fire-resistance construction. See exceptions. [2008 NFPA 70 450.21(B)]